

Best Management Practices Field Guide

**for
ESA § 4 (d) Habitat Protection**

March 2004

**Maintenance and Operations Division
Maintenance Office**



Washington State Department of Transportation

Contents

GLOSSARY OF ACRONYMS	5
INTRODUCTION	6
MAINTENANCE CREWS PDA CHECKLIST INSTRUCTIONS	7
ESA FIELD GUIDE PDA CHECKLIST FOR MAINTENANCE CREWS	11
RMEC FIELD GUIDE INSTRUCTION	14
#1: ROADWAY SURFACE	15
ACTIVITIES:	15
BMP TABLE:	15
#2: ENCLOSED DRAINAGE SYSTEMS	18
ACTIVITIES:	18
BMP TABLE:	18
#3: CLEANING ENCLOSED DRAINAGE SYSTEMS	21
ACTIVITIES:	21
BMP TABLE:	21
#4: OPEN DRAINAGE SYSTEMS	23
ACTIVITIES:	23
BMP TABLE:	23
#5: WATERCOURSES AND STREAMS	27
ACTIVITIES:	27
BMP TABLE:	27
#6: STREAM CROSSINGS	31
ACTIVITIES:	31
BMP TABLE:	31
#7: GRAVEL SHOULDERS	35
ACTIVITIES:	35
BMP TABLE:	35
#8: STREET SURFACE CLEANING	38
ACTIVITIES:	38
BMP TABLE:	38

#9: BRIDGE MAINTENANCE.....	40
ACTIVITIES:	40
BMP TABLE:	40
#10: SNOW AND ICE CONTROL.....	44
ACTIVITIES:	44
BMP TABLE:	44
#11: EMERGENCY SLIDE/WASHOUT REPAIR.....	46
ACTIVITIES:	46
BMP TABLE:	46
#12: CONCRETE	49
ACTIVITIES:	49
BMP TABLE:	49
#13: SEWER SYSTEMS.....	52
ACTIVITIES:	52
BMP TABLE:	52
#14: WATER SYSTEMS.....	55
ACTIVITIES:	55
BMP TABLE:	55
#15: VEGETATION.....	58
ACTIVITIES:	58
BMP TABLE:	58

Glossary of Acronyms

BMPs	Best Management Practices
ESA	Endangered Species Act
HPA	Hydraulic Project Approval
LWM	Large Woody Material
PDA	Personal Data Assistant
RMEC	Regional Maintenance Environmental Coordinator
RRMP	Regional Road Maintenance ESA Program Guidelines
ROW	Right-of-Way
WDFW	Washington State Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

Introduction

This guide is intended for WSDOT maintenance crews and regional maintenance environmental coordinators who work within sensitive priority areas (red). The guide was developed to train and alert staff as to when and where to apply and report implementation of the Regional Road Maintenance Endangered Species Act (ESA) Program Guidelines (RRMP) Best Management Practices (BMPs).

Knowing the location of aquatic habitat within the Right-of-Way (ROW) and using BMPs during maintenance activities in these sensitive priority areas (red) will conserve listed ESA threatened salmonids species habitat. The BMPs are not prescriptive, but are outcome based. The best professional judgment of **trained** maintenance personnel is instrumental in meeting the BMP outcomes (minimize erosion and sedimentation, contain pollutants and minimize impacts to vegetation root zone).

This guide provides instructions for filling out the Personal Data Assistant (PDA) checklist documenting WSDOT compliance with ESA § 4(d) "take" limits for the RRMP. This checklist constitutes the proof of your compliance with RRMP.

Following the Guide will not only conserve listed salmonids, but help protect water quality and quantity, aquatic and shoreline habitats and the traveling public safety.

Failure to document compliance could result in a violation under the ESA.

Maintenance Crews PDA Checklist Instructions

Determine the location of proposed work. Is work located within a **Red** sensitive area? If yes start a record. If no you're done, go to work. (Consult Roadside-Sensitive Management Area Atlas or fish sticks.)

Yes = PDA record.

1. Enter organization code number.
2. Enter name (last and first).
3. Enter beginning date work will be conducted.
4. Enter estimated ending date work will be completed.
5. Enter location (Highway # and mile post (beginning & ending)).
6. Enter work operation number.
7. Does the work have the potential to disturb/expose soils, discharge pollutants or disturb vegetation root systems? If no, record is complete, go to work.
8. Is work covered under a General Permit? If yes select from the pull down menu the general permit used. If no, contact regional maintenance environmental coordinator and secure permits if necessary.
9. Write in waterbody name.
10. Choose one Regional Road Maintenance ESA Program Guidelines (RRMP) Maintenance Category from the pull down menu that most closely fits your work. Review and implement routine and site specific BMPs for that maintenance category.

#1 Roadway Surface

Activities include the following: pothole and square cut patching; removing paved surface or roadway base; repairing roadway base; repaving; adding gravel or grading roads, access roads, or ROW surfaces; dust control; extending pavement edge; paving gravel shoulder; crack sealing; overlay; chip seal; resurfacing; pavement marking and traffic channelization; traffic control features.

#2 Enclosed Drainage Systems

Enclosed drainage systems include the following: facilities, retention/detention facilities, pollution control devices, manholes, catch basins, vaults, pipes, access roads and inlets/outlets.

#3 Cleaning Enclosed Drainage Systems

Removing debris, sediments and liquids from enclosed drainage systems using a vacuum/flush truck ("Vactor") by hand or other mechanical means. Enclosed drainage systems include the following: facilities, retention/ detention facilities, manholes, catch basins, vaults, pipes, access roads, pollution control devices and inlets.

#4 Open Drainage Systems

Systems include facilities, retention/detention facilities, swales, pollution control devices, manholes, catch basins, vaults, pipes, culverts, ditches, and inlets/outlets. Open drainage system includes stormwater conveyance systems that were created entirely by artificial means, such as roadside ditches and storm or surface water runoff facilities. These structures are not watercourses, streams or wetlands.

#5 Watercourses and Streams

Repair, replacement, installation and maintenance tasks performed on watercourses or streams. Activities may include structural repair/replacement, slope stabilization, sediment removal, vegetation management, debris removal, access road maintenance, habitat maintenance and improvements (for example fish ladders, weirs and large woody material).

#6 Stream Crossings

Repair, cleaning, maintenance, installation or replacement/upgrade of stream crossing facilities, such as pipes, arch pipes, box culverts, fish ladders, weirs, sediment pools, access roads and bridges.

#7 Gravel Shoulders

Maintenance tasks performed on gravel shoulders improve drainage, restore proper grade, restore filtering capability, maintain vegetation to provide adequate site distance, smooth rutting and remove buildup of sediment before entering drainage system.

#8 Street Surface Cleaning

Removing soil, organic material, dust, trash and other debris.

#9 Bridge Maintenance

Activities include inspecting, testing, repairing, replacing, maintaining, painting or resurfacing components of the bridge; such as the electrical system, substructure, superstructure, surface footings, piers, supports, access roads, abutments, ramps and vegetation management.

#10 Snow and Ice Control

Activities include snow blowing, plowing, drift removal, winter sand cleanup, sanding, anti-icing and de-icing application.

#11 Emergency Slide/Washout Repair

Activities include removal of slide/washout material from ROW; backfilling or stabilizing slope, reestablishment of damaged roadway structures; repairing and cleaning drainage system, restoring access road, revegetating, and/or armoring with rock.

#13 Sewer Systems

Repair, replace, install and maintain operating components of sewer facilities, including, but not limited to, treatment facilities, lift stations, pump stations, main lines, collection lines, trunk lines, interceptors, lake lines, access roads, associated ROW and storage/detention facilities.

#14 Water Systems

Repair, replace, install and maintain operating components of water system facilities, including, but not limited to, treatment plants, transmission mains, distribution lines, fire flow systems, reservoirs, tunnels, pump stations, meters, flushing, dewatering, services, access roads and associated ROWs or water system structures.

#15 Vegetation

Activities include repair, replacement, installation, removal and/or maintenance of the vegetation within the ROW.

11. Does maintenance work involve concrete? If yes, check box. Review routine and site specific BMPS.

#12 Concrete

Maintenance activities performed on the concrete structures, such as concrete roadways, sidewalks, driveways, curb and gutter sections include the following: removal or repair of damaged sections and installation of new structures.

12. Select the appropriate Site Specific BMPs from pull down menu.
13. Write in other site specific BMPs used that aren't listed in the pull down menu.
14. Write in any comments regarding process or observations on BMPs that can improve the program.

ESA Field Guide PDA Checklist for Maintenance Crews

Is work located within any **Red** sensitive areas? If yes start record. If no, you're done, go to work. (Consult Roadside Sensitive Management Areas Atlas or fish sticks.)

Work Information	
1. Org Code: _____	5. Location: _____
2. Name (last and first): _____	Highway # _____
3. Beginning Date: _____	Beginning Mile Post _____
4. Estimated Ending Date: _____	Ending Mile Post _____

6. Work Operation Number: _____

Checklist		
Steps	Yes/No	Comments
7. Does work have the potential to disturb/expose soils, discharge pollutants, or disturb vegetation root system?		
8. Is work covered under a General Permit? If yes, check the appropriate general permit that will be used to conduct the work. If no, contact Regional Maintenance Environmental Coordinator and secure permits if necessary.		<input type="checkbox"/> Removal of Beaver Dams HPA Control # GH-D9450-01 <input type="checkbox"/> Debris Removal/Relocation HPA Control # GH-D9416-03 <input type="checkbox"/> Bridge Cleaning & Washing HPA Control # GH-D9448-01 <input type="checkbox"/> Bridge Painting, Including Preparatory Cleaning, Washing, and Abrasive Blasting. HPA Control # GH-D9448-01 <input type="checkbox"/> Bridge General Maintenance & Repair HPA Control # GH-D9448-01 <input type="checkbox"/> Bridge Deck Overlay Replacement HPA Control # GH-D9448-01 <input type="checkbox"/> No general permit, contact the RMEC and secured permits if necessary.

9. Identify waterbody being impacted.		
10. Review and select Regional Road Maintenance ESA Program Guidelines maintenance category that most closely fits the work. Check the box of maintenance category selected. Review and implement routine and site specific BMPs for that maintenance category.		<input type="checkbox"/> #1 Roadway Surface <input type="checkbox"/> #2 Enclosed Drainage Systems <input type="checkbox"/> #3 Cleaning Enclosed Drainage Systems <input type="checkbox"/> #4 Open Drainage Systems <input type="checkbox"/> #5 Watercourses and Streams <input type="checkbox"/> #6 Stream Crossings <input type="checkbox"/> #7 Gravel Shoulders <input type="checkbox"/> #8 Street Surface Cleaning <input type="checkbox"/> #9 Bridge Maintenance <input type="checkbox"/> #10 Snow and Ice Control <input type="checkbox"/> #11 Emergency Slide/Washout Repair <input type="checkbox"/> #13 Sewer Systems <input type="checkbox"/> #14 Water Systems <input type="checkbox"/> #15 Vegetation
11. Does work involve concrete? If yes, check box. Review and implement routine and site specific BMPs.		<input type="checkbox"/> #12 Concrete
12. Check the appropriate boxes for the site specific BMPs that were utilized.		<input type="checkbox"/> Aqua Barrier <input type="checkbox"/> Back of Slope Planting <input type="checkbox"/> Cofferdam <input type="checkbox"/> Coir Fabric <input type="checkbox"/> Coir Log <input type="checkbox"/> Concrete Containment (1) <input type="checkbox"/> Concrete Containment (2) <input type="checkbox"/> Construction Access Road <input type="checkbox"/> Continuous Berm <input type="checkbox"/> Curb Inlet Sediment Trap <input type="checkbox"/> Dewatering <input type="checkbox"/> Diaper Netting <input type="checkbox"/> Ditch Lining <input type="checkbox"/> Diversion Berm <input type="checkbox"/> Diversion Channel <input type="checkbox"/> Dust Control <input type="checkbox"/> Excelsior Filled Log <input type="checkbox"/> Filter Fabric <input type="checkbox"/> Grass Lined Channel

		<ul style="list-style-type: none"> ❑ Gravel Filled Sump ❑ Half Round Filter ❑ Hand Seeding ❑ Hydroseeding ❑ Inlet Protection ❑ Kimble Filter Pipe ❑ Large Woody Material ❑ Live Staking ❑ Mulching ❑ Plastic Covering ❑ Plywood Work Platform ❑ Rip Rap ❑ Rock Check Dam ❑ Sandbag ❑ Sedimentation Sump ❑ Silt Fence ❑ Silt Mat ❑ Siltation Pond/Settling Tank ❑ Soil Stabilization (Blankets/Matting) ❑ Straw Bale Barrier (1) ❑ Straw Bale Barrier (2) ❑ Straw Bale Barrier (3) ❑ Straw Log ❑ Stream Bank Stabilization ❑ Stream Bypass ❑ Streambed Gravel ❑ Surface Roughening ❑ Sweeping ❑ Temporary Sediment Trap ❑ Triangular Silt Dike ❑ Turbidity Curtain ❑ Vactoring ❑ Vegetative Buffer ❑ Washed Rock
13. Write in any additional site specific BMPs that were utilized, but not listed in 7 above.		
14. Write any comments regarding process or BMPs that can improve the program.		

RMEC Field Guide Instruction

- 1.** Maintenance notifies RMEC with proposed in water work activity or potential work activity that could impact water. The notification will include maintenance contact and location (Highway # and mile post). Go to Step 2.
- 2.** RMEC or appropriate individual submits individual permit application. Go to Step 3.
- 3.** RMEC or appropriate individual receives permit approval. Go to Step 4.
- 4.** RMEC or appropriate individual contacts maintenance crew to inform them that work is covered under an individual permit. Provide a copy of the applicable permit to the crews. Go to Step 5.
- 5.** Maintenance fills out PDA checklist and goes to work with copies of the appropriate permits on site.

#1: Roadway Surface

Activities:

Activities include the following: pothole and square cut patching; removing paved surface or roadway base; repairing roadway base; repaving; adding gravel or grading roads, access roads, or ROW surfaces; dust control; extending pavement edge; paving gravel shoulder; crack sealing; overlay; chip seal; resurfacing; pavement marking and traffic channelization; traffic control features.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Roadway Surfaces	Perform repairs, replacement and maintenance of roadway surface.
Shoulder Work	Maximize opportunities for shoulder work, which will increase infiltration or bio-filtration. (See also Maintenance Category #7, Gravel Shoulders)
Equipment/Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none">• Routinely inspect equipment, tools and vehicles for leaks or damage.• Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills.• Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none">• Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping.• Remove buildup of oils and grease on equipment.• Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.

Continued on next page.

[illegible]

Site Specific BMPs

Continued from preceding page.

Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other waterbodies:

“Filter/Perimeter Protection”

Coir Log	Kimble Filter Pipe
Continuous Berm	Silt Fence
Curb Inlet Sediment Trap	Silt Mat
Excelsior Filled Log	Straw Bale Barrier (1)
Filter Fabric	Straw Bale Barrier (2)
Gravel Filled Sump	Straw Bale Barrier (3)
Half Round Filter	Straw Log
Inlet Protection	Washed Rock

“Reduce Potential for Soil Erosion”

Back of Slope Planting	Live Staking
Construction Access Road	Mulching
Ditch Lining	Plastic Covering
Dust Control	Soil Stabilization (Blankets/Matting)
Filter Fabric	Surface Roughening
Grass Lined Channel	Sweeping
Hand Seeding	Vegetative Buffer
Hydroseeding	

“Reduce Water Velocity/Erosive Forces”

Back of Slope Planting	Sandbag
Coir Fabric	Silt Fence
Coir Log	Silt Mat
Continuous Berm	Straw Bale Barrier (1)
Ditch Lining	Straw Bale Barrier (2)
Excelsior Filled Log	Straw Bale Barrier (3)
Hand Seeding	Straw Log
Hydroseeding	Stream Bank Stabilization
Large Woody Material	Surface Roughening
Live Staking	Triangular Silt Dike
Mulching	Turbidity Curtain
Rip Rap	Vegetative Buffer
Rock Check Dam	

Go to
<http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf>
RRMP Part 2 BMPs for installation guidelines.

#2: Enclosed Drainage Systems

Activities:

Enclosed drainage systems include the following: facilities, retention/detention facilities, pollution control devices, manholes, catch basins, vaults, pipes, access roads and inlets/outlets.

BMP Table:

Routine BMPs	
BMPs	Description
Maintaining Enclosed Drainage Systems	Perform repairs, replacement and maintenance of enclosed drainage systems.
Equipment/Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly.

Continued on next page.

<i>page.</i>																																							
Site Specific BMPs <i>Continued from preceding page.</i>	<p>“Filter/Perimeter Protection” (Con’t)</p> <table> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Reduce Potential for Soil Erosion”</p> <table> <tr> <td>Back of Slope Planting</td><td>Live Staking</td></tr> <tr> <td>Construction Access Road</td><td>Mulching</td></tr> <tr> <td>Ditch Lining</td><td>Plastic Covering</td></tr> <tr> <td>Dust Control</td><td>Soil Stabilization (Blankets/Matting)</td></tr> <tr> <td>Filter Fabric</td><td>Surface Roughening</td></tr> <tr> <td>Grass Lined Channel</td><td>Sweeping</td></tr> <tr> <td>Hand Seeding</td><td>Vegetative Buffer</td></tr> <tr> <td>Hydroseeding</td><td></td></tr> </table> <p>“Keep Water from Work Area”</p> <table> <tr> <td>Aqua Barrier</td><td>Plastic Covering</td></tr> <tr> <td>Cofferdam</td><td>Sandbag</td></tr> <tr> <td>Dewatering</td><td>Stream Bypass</td></tr> <tr> <td>Diversion Berm</td><td>Vactoring</td></tr> <tr> <td>Diversion Channel</td><td></td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Back of Slope Planting	Live Staking	Construction Access Road	Mulching	Ditch Lining	Plastic Covering	Dust Control	Soil Stabilization (Blankets/Matting)	Filter Fabric	Surface Roughening	Grass Lined Channel	Sweeping	Hand Seeding	Vegetative Buffer	Hydroseeding		Aqua Barrier	Plastic Covering	Cofferdam	Sandbag	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel	
Curb Inlet Sediment Trap	Silt Mat																																						
Excelsior Filled Log	Straw Bale Barrier (1)																																						
Filter Fabric	Straw Bale Barrier (2)																																						
Gravel Filled Sump	Straw Bale Barrier (3)																																						
Half Round Filter	Straw Log																																						
Inlet Protection	Washed Rock																																						
Back of Slope Planting	Live Staking																																						
Construction Access Road	Mulching																																						
Ditch Lining	Plastic Covering																																						
Dust Control	Soil Stabilization (Blankets/Matting)																																						
Filter Fabric	Surface Roughening																																						
Grass Lined Channel	Sweeping																																						
Hand Seeding	Vegetative Buffer																																						
Hydroseeding																																							
Aqua Barrier	Plastic Covering																																						
Cofferdam	Sandbag																																						
Dewatering	Stream Bypass																																						
Diversion Berm	Vactoring																																						
Diversion Channel																																							

#3: Cleaning Enclosed Drainage Systems

Activities:

Removing debris, sediments and liquids from enclosed drainage systems using a vacuum/flush truck ("Vactor"), by hand or other mechanical means. Enclosed drainage systems include the following: facilities, retention/detention facilities, manholes, catch basins, vaults, pipes, access roads, pollution control devices and inlets.

BMP Table:

Routine BMPs	
BMPs	Description
Cleaning Enclosed Drainage Systems	Maintain drainage systems.
Pre-Activity	Cleaning Enclosed Drainage Systems: Use BMPs that include, but are not limited to: <ul style="list-style-type: none"> • Blocking facility outlet. • Using less water. • Blocking downgradient end of pipe.
Equipment/Tools	<p>When using high-pressure flushing equipment, vacuum out solids to reduce sediment and turbidity from moving downgrade throughout the drainage system.</p> <p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, on site to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>Remove and dispose of collected materials and liquids off site.</p> <p>Solid materials removed from the site will be taken to a disposal or recycling area.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

#4: Open Drainage Systems

Activities:

These systems include facilities, retention/detention facilities, swales, pollution control devices, manholes, catch basins, vaults, pipes, culverts, ditches and inlets/outlets. (Open drainage systems that are part of the watercourses and streams systems are covered in Maintenance Category #5, Watercourses and Streams.)

BMP Table:

Routine BMPs	
BMPs	Description
Maintaining Open Drainage Systems	Maintain drainage systems.
Permits	Maintenance activities within waters of the state will be covered under Maintenance Category #5, Watercourses and Streams.
Scheduling	Plan and schedule work in dry conditions, except in emergency situations.
Equipment/Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations.</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater. • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filter, antifreeze, cleaning solutions lead-acid batteries, tires, hydraulic and transmission fluid.

Continued on next page.

Site Specific BMPs

Continued from preceding page.

Use any of the four BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:

“Filter/Perimeter Protection”

Coir Log	Kimble Filter Pipe
Continuous Berm	Silt Fence
Curb Inlet Sediment Trap	Silt Mat
Excelsior Filled Log	Straw Bale Barrier (1)
Filter Fabric	Straw Bale Barrier (2)
Gravel Filled Sump	Straw Bale Barrier (3)
Half Round Filter	Straw Log
Inlet Protection	Washed Rock

“Keep Water from Work Area”

Aqua Barrier	Plastic Covering
Cofferdam	Sandbag
Dewatering	Stream Bypass
Diversion Berm	Vactoring
Diversion Channel	

“Reduce Potential for Soil Erosion”

Back of Slope Planting	Filter Fabric
Construction Access Road	Live Staking
Ditch Lining	Mulching
Dust Control	Plastic Covering
Filter Fabric	Soil Stabilization (Blankets/Matting)
Grass Lined Channel	Surface Roughening
Hand Seeding	Sweeping
Hydroseeding	Vegetative Buffer

“Reduce Water Velocity/Erosive Forces”

Back of Slope Planting	Sandbag
Coir Fabric	Silt Fence
Coir Log	Silt Mat
Continuous Berm	Straw Bale Barrier (1)
Ditch Lining	Straw Bale Barrier (2)

Continued on next page.

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<div> <div> Excelsior Filled Log Grass Lined Channel Hand Seeding Hydroseeding Large Woody Material Live Staking Mulching Rip Rap Rock Check Dam </div> <div> Straw Bale Barrier (3) Straw Log Stream Bank Stabilization Surface Roughening Triangular Silt Dike Turbidity Curtain Vegetative Buffer </div> </div> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>
---	---

#5: Watercourses and Streams

Activities:

These activities may include structural repair/replacement, slope stabilization, sediment removal, vegetation management, debris removal, access road maintenance, habitat maintenance and improvements (for example, fish ladders, weirs and large woody material).

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Watercourses & Streams	Maintain drainage systems that are watercourses and/or streams.
Permits	<p>Maintenance activities within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required, habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Scheduling	Plan and schedule work in dry conditions or when flows are anticipated to be at their lowest when possible.
Fish Exclusion	<p>Follow "Fish Exclusion Protocol" (RRMP Appendix E) and permit conditions during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of nets, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools <i>Continued on next page.</i>	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment.

<p>Are you disturbing soils?</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • These conditions apply to all soils on site, whether or not at final grade. <p>Minimize disturbance to riparian vegetation:</p> <ul style="list-style-type: none"> • Mark job site. • Flag work area. • Operate equipment to minimize damage to riparian habitat. <p>Leave vegetative buffer of grasses and small forbs between the shoulder and ditch if the area is wide enough.</p> <p>Leave vegetated section in ditchline, where sediment buildup does not impede flow or infiltration.</p> <p>Leave vegetative buffer outside of work zone to provide biofiltration and shading outside of the back slope of ditch.</p> <p>Monitor water quality in accordance with permit requirements.</p> <p>Monitor plantings in accordance with permit requirements.</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																				
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the four BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Keep Water from Work Area”</p> <table border="0"> <tr> <td>Aqua Barrier</td><td>Plastic Covering</td></tr> <tr> <td>Cofferdam</td><td>Sandbag</td></tr> </table>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Aqua Barrier	Plastic Covering	Cofferdam	Sandbag
Coir Log	Kimble Filter Pipe																				
Continuous Berm	Silt Fence																				
Curb Inlet Sediment Trap	Silt Mat																				
Excelsior Filled Log	Straw Bale Barrier (1)																				
Filter Fabric	Straw Bale Barrier (2)																				
Gravel Filled Sump	Straw Bale Barrier (3)																				
Half Round Filter	Straw Log																				
Inlet Protection	Washed Rock																				
Aqua Barrier	Plastic Covering																				
Cofferdam	Sandbag																				

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>“Keep Water from Work Area” (con’t)</p> <table> <tr> <td>Dewatering</td><td>Stream Bypass</td></tr> <tr> <td>Diversion Berm</td><td>Vactoring</td></tr> <tr> <td>Diversion Channel</td><td></td></tr> </table> <p>“Habitat Protection/Maintenance”</p> <table> <tr> <td>Coir Fabric</td><td>Hydroseeding</td></tr> <tr> <td>Coir Log</td><td>Large Woody Material</td></tr> <tr> <td>Excelsior Filled Log</td><td>Live Staking</td></tr> <tr> <td>Hand Seeding</td><td>Streambed Gravel</td></tr> </table> <p>“Reduce Water Velocity/Erosive Forces”</p> <table> <tr> <td>Back of Slope Planting</td><td>Rock Check Dam</td></tr> <tr> <td>Coir Fabric</td><td>Sandbag</td></tr> <tr> <td>Coir Log</td><td>Silt Fence</td></tr> <tr> <td>Continuous Berm</td><td>Silt Mat</td></tr> <tr> <td>Ditch Lining</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Grass Lined Channel</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Hand Seeding</td><td>Straw Log</td></tr> <tr> <td>Hydroseeding</td><td>Stream Bank Stabilization</td></tr> <tr> <td>Large Woody Material</td><td>Surface Roughening</td></tr> <tr> <td>Live Staking</td><td>Triangular Silt Dike</td></tr> <tr> <td>Mulching</td><td>Turbidity Curtain</td></tr> <tr> <td>Rip Rap</td><td>Vegetative Buffer</td></tr> </table> <p>Go to: http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel		Coir Fabric	Hydroseeding	Coir Log	Large Woody Material	Excelsior Filled Log	Live Staking	Hand Seeding	Streambed Gravel	Back of Slope Planting	Rock Check Dam	Coir Fabric	Sandbag	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Ditch Lining	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Grass Lined Channel	Straw Bale Barrier (3)	Hand Seeding	Straw Log	Hydroseeding	Stream Bank Stabilization	Large Woody Material	Surface Roughening	Live Staking	Triangular Silt Dike	Mulching	Turbidity Curtain	Rip Rap	Vegetative Buffer
Dewatering	Stream Bypass																																								
Diversion Berm	Vactoring																																								
Diversion Channel																																									
Coir Fabric	Hydroseeding																																								
Coir Log	Large Woody Material																																								
Excelsior Filled Log	Live Staking																																								
Hand Seeding	Streambed Gravel																																								
Back of Slope Planting	Rock Check Dam																																								
Coir Fabric	Sandbag																																								
Coir Log	Silt Fence																																								
Continuous Berm	Silt Mat																																								
Ditch Lining	Straw Bale Barrier (1)																																								
Excelsior Filled Log	Straw Bale Barrier (2)																																								
Grass Lined Channel	Straw Bale Barrier (3)																																								
Hand Seeding	Straw Log																																								
Hydroseeding	Stream Bank Stabilization																																								
Large Woody Material	Surface Roughening																																								
Live Staking	Triangular Silt Dike																																								
Mulching	Turbidity Curtain																																								
Rip Rap	Vegetative Buffer																																								

#6: Stream Crossings

Activities:

Repair, cleaning, maintenance, installation or replacement/upgrade of stream crossing facilities, such as pipes, arch pipes, box culverts, fish ladders, weirs, sediment pools, access roads and bridges. Maintenance within waters of the state will be reviewed by the WDFW.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	<p>Maintenance activities within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required, habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Scheduling	<p>If seasonal watercourses or stream, schedule work during dry conditions.</p> <p>Plan and schedule work in dry conditions or low flow conditions except in emergency situations if possible (HPA).</p>
Fish Exclusion	<p>Follow "Fish Exclusion Protocol" (See RRMP Appendix E) and permit conditions during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of nets, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools <i>Continued on next page.</i>	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment.
Equipment/	<ul style="list-style-type: none"> • Perform equipment and vehicle maintenance in

Tools <i>Continued from preceding page.</i>	<p>areas that prevent discharges to the storm drain system.</p> <ul style="list-style-type: none"> • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/ maintenance waste materials from work site and dispose of and/or recycle.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
<p>Are you disturbing soils?</p> <p><i>Continued on next page.</i></p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade.
<p>Are you disturbing</p>	<p>Minimize disturbance to riparian vegetation:</p>

<p>soils?</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • Mark job site. • Flag work area. • Position equipment to protect riparian habitat. <p>Monitor water quality.</p> <p>Restore vegetation appropriate for site conditions within riparian areas.</p> <p>Protect outflows by bio-vegetation techniques or armoring to reduce erosion.</p> <p>Monitor vegetation and stream habitat in accordance with permit conditions.</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																																		
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the four BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies.</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Keep Water from Work Area”</p> <table border="0"> <tr> <td>Aqua Barrier</td><td>Plastic Covering</td></tr> <tr> <td>Cofferdam</td><td>Sandbag</td></tr> <tr> <td>Dewatering</td><td>Stream Bypass</td></tr> <tr> <td>Diversion Berm</td><td>Vactoring</td></tr> <tr> <td>Diversion Channel</td><td></td></tr> </table> <p>"Habitat Protection/Maintenance"</p> <table border="0"> <tr> <td>Coir Fabric</td><td>Hydroseeding</td></tr> <tr> <td>Coir Log</td><td>Large Woody Material</td></tr> <tr> <td>Excelsior Filled Log</td><td>Live Staking</td></tr> <tr> <td>Hand Seeding</td><td>Streambed Gravel</td></tr> </table>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Aqua Barrier	Plastic Covering	Cofferdam	Sandbag	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel		Coir Fabric	Hydroseeding	Coir Log	Large Woody Material	Excelsior Filled Log	Live Staking	Hand Seeding	Streambed Gravel
Coir Log	Kimble Filter Pipe																																		
Continuous Berm	Silt Fence																																		
Curb Inlet Sediment Trap	Silt Mat																																		
Excelsior Filled Log	Straw Bale Barrier (1)																																		
Filter Fabric	Straw Bale Barrier (2)																																		
Gravel Filled Sump	Straw Bale Barrier (3)																																		
Half Round Filter	Straw Log																																		
Inlet Protection	Washed Rock																																		
Aqua Barrier	Plastic Covering																																		
Cofferdam	Sandbag																																		
Dewatering	Stream Bypass																																		
Diversion Berm	Vactoring																																		
Diversion Channel																																			
Coir Fabric	Hydroseeding																																		
Coir Log	Large Woody Material																																		
Excelsior Filled Log	Live Staking																																		
Hand Seeding	Streambed Gravel																																		

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>“Reduce Water Velocity/Erosive Forces”</p> <table border="0"> <tr> <td>Back of Slope Planting</td><td>Rock Check Dam</td></tr> <tr> <td>Coir Fabric</td><td>Sandbag</td></tr> <tr> <td>Coir Log</td><td>Silt Fence</td></tr> <tr> <td>Continuous Berm</td><td>Silt Mat</td></tr> <tr> <td>Ditch Lining</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Grass Lined Channel</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Hand Seeding</td><td>Straw Log</td></tr> <tr> <td>Hydroseeding</td><td>Stream Bank Stabilization</td></tr> <tr> <td>Large Woody Material</td><td>Surface Roughening</td></tr> <tr> <td>Live Staking</td><td>Triangular Silt Dike</td></tr> <tr> <td>Mulching</td><td>Turbidity Curtain</td></tr> <tr> <td>Rip Rap</td><td>Vegetative Buffer</td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Back of Slope Planting	Rock Check Dam	Coir Fabric	Sandbag	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Ditch Lining	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Grass Lined Channel	Straw Bale Barrier (3)	Hand Seeding	Straw Log	Hydroseeding	Stream Bank Stabilization	Large Woody Material	Surface Roughening	Live Staking	Triangular Silt Dike	Mulching	Turbidity Curtain	Rip Rap	Vegetative Buffer
Back of Slope Planting	Rock Check Dam																										
Coir Fabric	Sandbag																										
Coir Log	Silt Fence																										
Continuous Berm	Silt Mat																										
Ditch Lining	Straw Bale Barrier (1)																										
Excelsior Filled Log	Straw Bale Barrier (2)																										
Grass Lined Channel	Straw Bale Barrier (3)																										
Hand Seeding	Straw Log																										
Hydroseeding	Stream Bank Stabilization																										
Large Woody Material	Surface Roughening																										
Live Staking	Triangular Silt Dike																										
Mulching	Turbidity Curtain																										
Rip Rap	Vegetative Buffer																										

#7: Gravel Shoulders

Activities:

Maintenance tasks performed on gravel shoulders improve drainage, restore proper grade, restore filtering capability, maintain vegetation to provide adequate site distance, smooth rutting and remove buildup of sediment before entering drainage system.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Gravel Shoulders	Perform maintenance. Remove built-up sediment and sod. Restore gravel shoulder. Roll shoulder material to ensure proper grade and retention of sediment control qualities.
Scheduling	Periodically remove sediment deposits and vegetation during the dry season when possible with a motor grader.
Equipment/Tools	Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations: <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly.

Continued on next page.

<p>Equipment/ Tools</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
<p>Material/Debris Disposal</p>	<p>After repairs are completed, remove construction/ maintenance waste materials from work site and dispose of and/or recycle.</p> <p>Use pickup sweepers to remove materials from roadway in assigned areas.</p>
<p>Spill Prevention & Control</p>	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

Site Specific BMPs

BMPs	Description
<p>Are you disturbing soils?</p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p> <p>Minimize disturbance to vegetation outside of shoulder area. Leave vegetative strip where possible between the gravel and ditch line for biofiltration.</p>

Continued on next page.

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>Use the BMP outcome category listed below at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table> <tr> <td>Coir Log</td><td>Silt Fence</td></tr> <tr> <td>Continuous Berm</td><td>Silt Mat</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Filter Fabric</td><td>Inlet Protection</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Kimble Filter Pipe</td><td>Washed Rock</td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Curb Inlet Sediment Trap	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Filter Fabric	Inlet Protection	Half Round Filter	Straw Log	Kimble Filter Pipe	Washed Rock
Coir Log	Silt Fence																
Continuous Berm	Silt Mat																
Curb Inlet Sediment Trap	Straw Bale Barrier (1)																
Excelsior Filled Log	Straw Bale Barrier (2)																
Gravel Filled Sump	Straw Bale Barrier (3)																
Filter Fabric	Inlet Protection																
Half Round Filter	Straw Log																
Kimble Filter Pipe	Washed Rock																

#8: Street Surface Cleaning

Activities:

Removing soil, organic material, dust, trash and other debris to keep road surfaces clean and remove sediment from the roadway before it enters the storm drain system, surface water system, watercourses, streams or other waterbodies. The removal of dust also reduces airborne pollution and sediment loading.

BMP Table:

Routine BMPs	
BMPs	Description
Pre-Activity	Use clean up procedures that protect water quality.
Equipment/ Tools	<p>Control speed of sweeper to minimize airborne particulates and remove maximum amount of debris.</p> <p>Use water spray system on sweeper to reduce dust.</p> <p>Use pickup sweepers to remove materials from roadway in assigned areas.</p> <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible.</p> <p>Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, hydraulic and transmission fluids and tires. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/ maintenance waste materials from work site and dispose of and/or recycle.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

#9: Bridge Maintenance

Activities:

Bridge maintenance activities include inspecting, testing, repairing, replacing, maintaining, painting or resurfacing components of the bridge such as the electrical system, substructure, superstructure, surface footing, piers, supports, access roads, abutments, ramps and vegetation management.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	Bridge maintenance activities requiring an HPA will be reviewed with the WDFW and permitted prior to construction in accordance with the HPAs.
Scheduling	If bridge maintenance is to be performed in a seasonal watercourse or stream, schedule the work during dry conditions if possible.
Habitat Measures	Maintain or add areas of spawning, migration, feeding, or rearing habitat as directed by WDFW (HPA) permit, public safety and ROW structure conditions allow. Place appropriate streambed material (HPA).
Equipment/Tools	Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations: <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field.

Continued on next page.

<p>Are you disturbing soils?</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • Operate equipment to minimize damage to riparian habitat. <p>Monitor water quality in accordance with permit requirements.</p> <p>Restore vegetation where appropriate for site conditions within riparian areas (HPA).</p> <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																																				
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the five BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Reduce Potential for Contaminants Falling into Water”</p> <table border="0"> <tr> <td>Diaper Netting</td><td>Plywood Work Platform</td></tr> </table> <p>"Settling"</p> <table border="0"> <tr> <td>Coir Fabric</td><td>Silt Mat</td></tr> <tr> <td>Continuous Berm</td><td>Siltation Pond/ Settling Tank</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Rock Check Dam</td><td>Straw Log</td></tr> <tr> <td>Sandbag</td><td>Temporary Sediment Trap</td></tr> <tr> <td>Sedimentation Sump</td><td>Triangular Silt Dike</td></tr> <tr> <td>Silt Fence</td><td>Turbidity Curtain</td></tr> </table>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Diaper Netting	Plywood Work Platform	Coir Fabric	Silt Mat	Continuous Berm	Siltation Pond/ Settling Tank	Curb Inlet Sediment Trap	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Filter Fabric	Straw Bale Barrier (3)	Rock Check Dam	Straw Log	Sandbag	Temporary Sediment Trap	Sedimentation Sump	Triangular Silt Dike	Silt Fence	Turbidity Curtain
Coir Log	Kimble Filter Pipe																																				
Continuous Berm	Silt Fence																																				
Curb Inlet Sediment Trap	Silt Mat																																				
Excelsior Filled Log	Straw Bale Barrier (1)																																				
Filter Fabric	Straw Bale Barrier (2)																																				
Gravel Filled Sump	Straw Bale Barrier (3)																																				
Half Round Filter	Straw Log																																				
Inlet Protection	Washed Rock																																				
Diaper Netting	Plywood Work Platform																																				
Coir Fabric	Silt Mat																																				
Continuous Berm	Siltation Pond/ Settling Tank																																				
Curb Inlet Sediment Trap	Straw Bale Barrier (1)																																				
Excelsior Filled Log	Straw Bale Barrier (2)																																				
Filter Fabric	Straw Bale Barrier (3)																																				
Rock Check Dam	Straw Log																																				
Sandbag	Temporary Sediment Trap																																				
Sedimentation Sump	Triangular Silt Dike																																				
Silt Fence	Turbidity Curtain																																				

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>"Habitat Protection/Maintenance"</p> <table> <tr> <td>Coir Fabric</td><td>Hydroseeding</td></tr> <tr> <td>Coir Log</td><td>Large Woody Material</td></tr> <tr> <td>Excelsior Filled Log</td><td>Live Staking</td></tr> <tr> <td>Hand Seeding</td><td>Streambed Gravel</td></tr> </table> <p>"Reduce Water Velocity/Erosive Forces"</p> <table> <tr> <td>Back of Slope Planting</td><td>Rock Check Dam</td></tr> <tr> <td>Coir Fabric</td><td>Sandbag</td></tr> <tr> <td>Coir Log</td><td>Silt Fence</td></tr> <tr> <td>Continuous Berm</td><td>Silt Mat</td></tr> <tr> <td>Ditch Lining</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Grass Lined Channel</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Hand Seeding</td><td>Straw Log</td></tr> <tr> <td>Hydroseeding</td><td>Stream Bank Stabilization</td></tr> <tr> <td>Large Woody Material</td><td>Surface Roughening</td></tr> <tr> <td>Live Staking</td><td>Triangular Silt Dike</td></tr> <tr> <td>Mulching</td><td>Turbidity Curtain</td></tr> <tr> <td>Rip Rap</td><td>Vegetative Buffer</td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Coir Fabric	Hydroseeding	Coir Log	Large Woody Material	Excelsior Filled Log	Live Staking	Hand Seeding	Streambed Gravel	Back of Slope Planting	Rock Check Dam	Coir Fabric	Sandbag	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Ditch Lining	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Grass Lined Channel	Straw Bale Barrier (3)	Hand Seeding	Straw Log	Hydroseeding	Stream Bank Stabilization	Large Woody Material	Surface Roughening	Live Staking	Triangular Silt Dike	Mulching	Turbidity Curtain	Rip Rap	Vegetative Buffer
Coir Fabric	Hydroseeding																																		
Coir Log	Large Woody Material																																		
Excelsior Filled Log	Live Staking																																		
Hand Seeding	Streambed Gravel																																		
Back of Slope Planting	Rock Check Dam																																		
Coir Fabric	Sandbag																																		
Coir Log	Silt Fence																																		
Continuous Berm	Silt Mat																																		
Ditch Lining	Straw Bale Barrier (1)																																		
Excelsior Filled Log	Straw Bale Barrier (2)																																		
Grass Lined Channel	Straw Bale Barrier (3)																																		
Hand Seeding	Straw Log																																		
Hydroseeding	Stream Bank Stabilization																																		
Large Woody Material	Surface Roughening																																		
Live Staking	Triangular Silt Dike																																		
Mulching	Turbidity Curtain																																		
Rip Rap	Vegetative Buffer																																		

#10: Snow and Ice Control

Activities:

Activities include snow blowing, plowing drift removal, winter sand cleanup, sanding anti-icing and de-icing application.

BMP Table:

Routine BMPs	
BMPs	Description
Operational	<p>Minimize use of salt by reducing salt-to-sand ratios.</p> <p>Treat sand clean up as part of the emergency: remove sand as a priority in order to remove sediments.</p> <p>Plow snow in areas that allow vegetation to filter and contain sand.</p> <p>Prioritize clean up efforts to aquatic habitat areas to minimize impacts.</p> <p>Prioritize clean up in areas <u>without</u> sediment collection systems.</p>
Equipment/ Tools	<p>Tool and Equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials, onsite to allow prompt clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move equipment and tools off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>Remove construction/maintenance waste materials from work site and dispose of and/or recycle.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>

#11: Emergency Slide/Washout Repair

Activities:

Slides and washout repair activities may include the following: removal of slide/washout material from ROW; backfilling or stabilizing slope, reestablishment of damaged roadway structures; repairing and cleaning drainage system; restoring access road; revegetating and/or armoring with rock.

BMP Table:

Routine BMPs	
BMPs	Description
Permits	<p>Follow regions notification procedures. Maintenance within waters of the state will be reviewed by WDFW and permitted with an HPA, as necessary.</p> <p>When required habitat restoration will be designed and constructed in accordance with applicable permits.</p>
Fish Exclusion	<p>Where practical and without jeopardizing the emergency response, in a timely manner, "Fish Exclusion Protocol" (See RRMP Appendix E) and permit conditions will be followed during maintenance activities.</p> <p>Fish will be excluded from the construction area using appropriate methods such as the use of net, dewatering at a controlled rate and removal of stranded fish according to HPA permit conditions.</p>
Equipment/ Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible.</p> <p>Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/ maintenance waste materials from site for disposal or recycling.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p>

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>“Filter/Perimeter Protection”</p> <table> <tr><td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr><td>Continuous Berm</td><td>Silt Fence</td></tr> <tr><td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr><td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr><td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr><td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr><td>Half Round Filter</td><td>Straw Log</td></tr> <tr><td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Keep Water from Work Area”</p> <table> <tr><td>Aqua Barrier</td><td>Plastic Covering</td></tr> <tr><td>Cofferdam</td><td>Sandbag</td></tr> <tr><td>Dewatering</td><td>Stream Bypass</td></tr> <tr><td>Diversion Berm</td><td>Vactoring</td></tr> <tr><td>Diversion Channel</td><td></td></tr> </table> <p>“Reduce Water Velocity/Erosive Forces”</p> <table> <tr><td>Back of Slope Planting</td><td>Rock Check Dam</td></tr> <tr><td>Coir Fabric</td><td>Sandbag</td></tr> <tr><td>Coir Log</td><td>Silt Fence</td></tr> <tr><td>Continuous Berm</td><td>Silt Mat</td></tr> <tr><td>Ditch Lining</td><td>Straw Bale Barrier (1)</td></tr> <tr><td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr><td>Grass Lined Channel</td><td>Straw Bale Barrier (3)</td></tr> <tr><td>Hand Seeding</td><td>Straw Log</td></tr> <tr><td>Hydroseeding</td><td>Stream Bank Stabilization</td></tr> <tr><td>Large Woody Material</td><td>Surface Roughening</td></tr> <tr><td>Live Staking</td><td>Triangular Silt Dike</td></tr> <tr><td>Mulching</td><td>Turbidity Curtain</td></tr> <tr><td>Rip Rap</td><td>Vegetative Buffer</td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Aqua Barrier	Plastic Covering	Cofferdam	Sandbag	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel		Back of Slope Planting	Rock Check Dam	Coir Fabric	Sandbag	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Ditch Lining	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Grass Lined Channel	Straw Bale Barrier (3)	Hand Seeding	Straw Log	Hydroseeding	Stream Bank Stabilization	Large Woody Material	Surface Roughening	Live Staking	Triangular Silt Dike	Mulching	Turbidity Curtain	Rip Rap	Vegetative Buffer
Coir Log	Kimble Filter Pipe																																																				
Continuous Berm	Silt Fence																																																				
Curb Inlet Sediment Trap	Silt Mat																																																				
Excelsior Filled Log	Straw Bale Barrier (1)																																																				
Filter Fabric	Straw Bale Barrier (2)																																																				
Gravel Filled Sump	Straw Bale Barrier (3)																																																				
Half Round Filter	Straw Log																																																				
Inlet Protection	Washed Rock																																																				
Aqua Barrier	Plastic Covering																																																				
Cofferdam	Sandbag																																																				
Dewatering	Stream Bypass																																																				
Diversion Berm	Vactoring																																																				
Diversion Channel																																																					
Back of Slope Planting	Rock Check Dam																																																				
Coir Fabric	Sandbag																																																				
Coir Log	Silt Fence																																																				
Continuous Berm	Silt Mat																																																				
Ditch Lining	Straw Bale Barrier (1)																																																				
Excelsior Filled Log	Straw Bale Barrier (2)																																																				
Grass Lined Channel	Straw Bale Barrier (3)																																																				
Hand Seeding	Straw Log																																																				
Hydroseeding	Stream Bank Stabilization																																																				
Large Woody Material	Surface Roughening																																																				
Live Staking	Triangular Silt Dike																																																				
Mulching	Turbidity Curtain																																																				
Rip Rap	Vegetative Buffer																																																				

#12: Concrete

Activities:

Maintenance activities performed on the concrete structures, such as concrete roadways, sidewalks, driveways, curb and gutter sections include the following: removal or repair of damaged sections and installation of new structures.

BMP Table:

Routine BMPs	
BMPs	Description
Equipment/ Tools	<p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas. Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Continued on next page.	

Material/Debris Disposal <i>Continued from preceding page.</i>	After repairs are complete, remove construction/ maintenance waste materials from site for disposal or recycling.																
Spill Prevention & Control	Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.																
Site Specific BMPs																	
BMPs	Description																
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																
Site Specific BMPs	<p>Use any of the two BMP outcomes categories at or around the work site to reduce turbidity, sediment and/or worksite pollutants from entering watercourses or streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock
Coir Log	Kimble Filter Pipe																
Continuous Berm	Silt Fence																
Curb Inlet Sediment Trap	Silt Mat																
Excelsior Filled Log	Straw Bale Barrier (1)																
Filter Fabric	Straw Bale Barrier (2)																
Gravel Filled Sump	Straw Bale Barrier (3)																
Half Round Filter	Straw Log																
Inlet Protection	Washed Rock																
<i>Continued on next page.</i>																	

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>"Containment"</p> <p>Concrete Containment (1) Vactoring</p> <p>Concrete Containment (2)</p> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>
---	---

#13: Sewer Systems

Activities:

Repair, replace, install and maintain operating components of sewer facilities, including, but not limited to, treatment facilities, lift stations, pump stations, main lines, collection lines, interceptors, lake line, access roads, associated ROW and storage/detention facilities.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of Sewer Systems	Maintain sewer system.
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials; on site to allow promptly clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/ maintenance waste materials from site for disposal or recycling.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other waterbodies:</p>

Site Specific BMPs

Continued from preceding page.

“Filter/Perimeter Protection”

Coir Log	Kimble Filter Pipe
Continuous Berm	Silt Fence
Curb Inlet Sediment Trap	Silt Mat
Excelsior Filled Log	Straw Bale Barrier (1)
Filter Fabric	Straw Bale Barrier (2)
Gravel Filled Sump	Straw Bale Barrier (3)
Half Round Filter	Straw Log
Inlet Protection	Washed Rock

“Keep Water from Work Area”

Aqua Barrier	Plastic Covering
Cofferdam	Sandbag
Dewatering	Stream Bypass
Diversion Berm	Vactoring
Diversion Channel	

“Reduce Potential for Soil Erosion”

Back of Slope Planting	Live Staking
Construction Access Road	Mulching
Ditch Lining	Plastic Covering
Dust Control	Soil Stabilization (Blankets/Matting)
Filter Fabric	Surface Roughening
Grass Lined Channel	Sweeping
Hand Seeding	Vegetative Buffer
Hydroseeding	

Go to
<http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf>

RRMP Part 2 BMPs for installation guidelines.

#14: Water Systems

Activities:

Repair, replace, install and maintain operating components of water system facilities including, but not limited to, treatment plant, transmission mains, distribution lines, fire flow systems, reservoirs, tunnels, pump stations, meters, flushing, dewatering, services, access roads and associated ROWs or water system structures.

BMP Table:

Routine BMPs	
BMPs	Description
Water Systems	Maintain sewer system.
Operational	Develop protocols for dechlorination of water. Develop a flushing program.
Equipment/ Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials; on site to allow promptly clean up of spills. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system. • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible.

Continued on next page.

Equipment/ Tools <i>Continued from preceding page.</i>	<ul style="list-style-type: none"> • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
Material/Debris Disposal	<p>After repairs are completed, remove construction/ maintenance waste materials from site for disposal or recycling.</p>
Spill Prevention & Control	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
Site Specific BMPs	
BMPs	Description
Are you disturbing soils?	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days. • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>
Site Specific BMPs <i>Continued on next page.</i>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other waterbodies:</p>

<p>Site Specific BMPs</p> <p><i>Continued from preceding page.</i></p>	<p>“Filter/Perimeter Protection”</p> <table> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Keep Water from Work Area”</p> <table> <tr> <td>Aqua Barrier</td><td>Plastic Covering</td></tr> <tr> <td>Cofferdam</td><td>Sandbag</td></tr> <tr> <td>Dewatering</td><td>Stream Bypass</td></tr> <tr> <td>Diversion Berm</td><td>Vactoring</td></tr> <tr> <td>Diversion Channel</td><td></td></tr> </table> <p>“Reduce Potential for Soil Erosion”</p> <table> <tr> <td>Back of Slope Planting</td><td>Live Staking</td></tr> <tr> <td>Construction Access Road</td><td>Mulching</td></tr> <tr> <td>Ditch Lining</td><td>Plastic Covering</td></tr> <tr> <td>Dust Control</td><td>Soil Stabilization (Blankets/Matting)</td></tr> <tr> <td>Filter Fabric</td><td>Surface Roughening</td></tr> <tr> <td>Grass Lined Channel</td><td>Sweeping</td></tr> <tr> <td>Hand Seeding</td><td>Vegetative Buffer</td></tr> <tr> <td>Hydroseeding</td><td></td></tr> </table> <p>Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.</p>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Aqua Barrier	Plastic Covering	Cofferdam	Sandbag	Dewatering	Stream Bypass	Diversion Berm	Vactoring	Diversion Channel		Back of Slope Planting	Live Staking	Construction Access Road	Mulching	Ditch Lining	Plastic Covering	Dust Control	Soil Stabilization (Blankets/Matting)	Filter Fabric	Surface Roughening	Grass Lined Channel	Sweeping	Hand Seeding	Vegetative Buffer	Hydroseeding	
Coir Log	Kimble Filter Pipe																																										
Continuous Berm	Silt Fence																																										
Curb Inlet Sediment Trap	Silt Mat																																										
Excelsior Filled Log	Straw Bale Barrier (1)																																										
Filter Fabric	Straw Bale Barrier (2)																																										
Gravel Filled Sump	Straw Bale Barrier (3)																																										
Half Round Filter	Straw Log																																										
Inlet Protection	Washed Rock																																										
Aqua Barrier	Plastic Covering																																										
Cofferdam	Sandbag																																										
Dewatering	Stream Bypass																																										
Diversion Berm	Vactoring																																										
Diversion Channel																																											
Back of Slope Planting	Live Staking																																										
Construction Access Road	Mulching																																										
Ditch Lining	Plastic Covering																																										
Dust Control	Soil Stabilization (Blankets/Matting)																																										
Filter Fabric	Surface Roughening																																										
Grass Lined Channel	Sweeping																																										
Hand Seeding	Vegetative Buffer																																										
Hydroseeding																																											

#15: Vegetation

Activities:

Activities include repair, replacement, installation, removal and/or maintenance of the vegetation within the ROW. Vegetation is an integral part of the road ROW structure. Vegetation maintenance includes, but is not limited to, mechanical, chemical, cultural and biological control. It also includes the systems and structures that support the vegetation.

BMP Table:

Routine BMPs	
BMPs	Description
Maintenance of ROW	Perform repairs, replacement and maintenance of roadway vegetation.
Maintenance of Shoulder Work	Maximize opportunities for shoulder work, which will increase infiltration or bio-filtration. (See also Category #7, Gravel Shoulders.)
Equipment/Tools	<p>Tools and equipment clean up procedures:</p> <ul style="list-style-type: none"> • Routinely inspect equipment, tools and vehicles for leaks or damage. • Keep clean up materials, such as dry absorbent materials; on site to allow promptly clean up of spill. • Promptly repair or replace leaking connections, pipes, hoses and/or valves. <p>Vehicle and equipment maintenance, repair and/or service will be performed at designated repair facilities whenever possible. Use the following practices to reduce the potential for discharge of pollutants to watercourses or streams from vehicle and equipment maintenance, service and repair operations:</p> <ul style="list-style-type: none"> • Prohibit discharge of any wastewaters to stormwater drains. Do not pour material down drains or hose down work areas. Use either dry sweeping or damp mopping. • Remove buildup of oils and grease on equipment. • Perform equipment and vehicle maintenance in areas that prevent discharges to the storm drain system.

Continued on next page.

<p>Equipment/ Tools</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • Use drip pans under equipment when maintaining, repairing or servicing in the field. • Use non-toxic solvents whenever possible. • Clean maintenance area storm drain grates regularly. • Collect and properly manage (recycle or dispose of) used materials: grease, oil, oil filters, antifreeze, cleaning solutions, lead-acid batteries, tires, hydraulic and transmission fluids. • Surfaces shall be cleaned following any discharge or spill incident. <p>At the end of shift, park equipment in designated areas.</p> <p>Clean equipment and tools off site in an area where pollutants can be contained.</p> <p>If unable to move tools and equipment off site, control and remove cleaning by-products.</p>
<p>Material/Debris Disposal</p>	<p>After repairs are completed, remove construction/maintenance waste materials from site for disposal or recycling.</p> <p>If area is swept with a pickup sweeper, the material will be hauled out of the area to appropriate disposal site.</p>
<p>Spill Prevention & Control</p>	<p>Carry spill kit used for small spills related to equipment failure. At a minimum, WSDOT will carry a five-gallon capacity spill kit designed for petroleum products that will be carried on vehicle or with equipment. Desired outcome is to control, absorb or contain spill for clean up and disposal.</p>
<p align="center">Site Specific BMPs</p>	
BMPs	Description
<p>Are you disturbing soils?</p> <p><i>Continued on next page.</i></p>	<p>Exposed and unworked soils shall be stabilized by application of BMPs that protect soil from the erosive forces of raindrop impact and flowing water:</p> <ul style="list-style-type: none"> • During winter season – October through June – no soil shall remain exposed and unworked for more than two days. • During the summer season – July through September – no soils shall remain exposed and unworked for more than seven days.

<p>Are you disturbing soils?</p> <p><i>Continued from preceding page.</i></p>	<ul style="list-style-type: none"> • These conditions apply to all soils on site, whether or not at final grade. <p>Prior to BMP removal, clean up accumulated sediments and seed or replant disturbed area.</p>																																																
<p>Site Specific BMPs</p> <p><i>Continued on next page.</i></p>	<p>Use any of the three BMP outcome categories at or around the work site to reduce turbidity, sediment and/or pollutants from entering watercourses, streams, wetlands, lakes or other waterbodies:</p> <p>“Filter/Perimeter Protection”</p> <table border="0"> <tr> <td>Coir Log</td><td>Kimble Filter Pipe</td></tr> <tr> <td>Continuous Berm</td><td>Silt Fence</td></tr> <tr> <td>Curb Inlet Sediment Trap</td><td>Silt Mat</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Filter Fabric</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Gravel Filled Sump</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Half Round Filter</td><td>Straw Log</td></tr> <tr> <td>Inlet Protection</td><td>Washed Rock</td></tr> </table> <p>“Reduce Potential for Soil Erosion”</p> <table border="0"> <tr> <td>Back of Slope Planting</td><td>Live Staking</td></tr> <tr> <td>Construction Access Road</td><td>Mulching</td></tr> <tr> <td>Ditch Lining</td><td>Plastic Covering</td></tr> <tr> <td>Dust Control</td><td>Soil Stabilization (Blankets/Matting)</td></tr> <tr> <td>Filter Fabric</td><td>Surface Roughening</td></tr> <tr> <td>Grass Lined Channel</td><td>Sweeping</td></tr> <tr> <td>Hand Seeding</td><td>Vegetative Buffer</td></tr> <tr> <td>Hydroseeding</td><td></td></tr> </table> <p>“Reduce Water Velocity/Erosive Forces”</p> <table border="0"> <tr> <td>Back of Slope Planting</td><td>Rock Check Dam</td></tr> <tr> <td>Coir Fabric</td><td>Sandbag</td></tr> <tr> <td>Coir Log</td><td>Silt Fence</td></tr> <tr> <td>Continuous Berm</td><td>Silt Mat</td></tr> <tr> <td>Ditch Lining</td><td>Straw Bale Barrier (1)</td></tr> <tr> <td>Excelsior Filled Log</td><td>Straw Bale Barrier (2)</td></tr> <tr> <td>Grass Lined Channel</td><td>Straw Bale Barrier (3)</td></tr> <tr> <td>Hand Seeding</td><td>Straw Log</td></tr> </table>	Coir Log	Kimble Filter Pipe	Continuous Berm	Silt Fence	Curb Inlet Sediment Trap	Silt Mat	Excelsior Filled Log	Straw Bale Barrier (1)	Filter Fabric	Straw Bale Barrier (2)	Gravel Filled Sump	Straw Bale Barrier (3)	Half Round Filter	Straw Log	Inlet Protection	Washed Rock	Back of Slope Planting	Live Staking	Construction Access Road	Mulching	Ditch Lining	Plastic Covering	Dust Control	Soil Stabilization (Blankets/Matting)	Filter Fabric	Surface Roughening	Grass Lined Channel	Sweeping	Hand Seeding	Vegetative Buffer	Hydroseeding		Back of Slope Planting	Rock Check Dam	Coir Fabric	Sandbag	Coir Log	Silt Fence	Continuous Berm	Silt Mat	Ditch Lining	Straw Bale Barrier (1)	Excelsior Filled Log	Straw Bale Barrier (2)	Grass Lined Channel	Straw Bale Barrier (3)	Hand Seeding	Straw Log
Coir Log	Kimble Filter Pipe																																																
Continuous Berm	Silt Fence																																																
Curb Inlet Sediment Trap	Silt Mat																																																
Excelsior Filled Log	Straw Bale Barrier (1)																																																
Filter Fabric	Straw Bale Barrier (2)																																																
Gravel Filled Sump	Straw Bale Barrier (3)																																																
Half Round Filter	Straw Log																																																
Inlet Protection	Washed Rock																																																
Back of Slope Planting	Live Staking																																																
Construction Access Road	Mulching																																																
Ditch Lining	Plastic Covering																																																
Dust Control	Soil Stabilization (Blankets/Matting)																																																
Filter Fabric	Surface Roughening																																																
Grass Lined Channel	Sweeping																																																
Hand Seeding	Vegetative Buffer																																																
Hydroseeding																																																	
Back of Slope Planting	Rock Check Dam																																																
Coir Fabric	Sandbag																																																
Coir Log	Silt Fence																																																
Continuous Berm	Silt Mat																																																
Ditch Lining	Straw Bale Barrier (1)																																																
Excelsior Filled Log	Straw Bale Barrier (2)																																																
Grass Lined Channel	Straw Bale Barrier (3)																																																
Hand Seeding	Straw Log																																																

Site Specific BMPs <i>Continued from preceding page</i>	Hydroseeding Large Woody Material Live Staking Mulching Rip Rap Go to http://www.wsdot.wa.gov/biz/maintenance/pdf/Guidelines/Part2.pdf RRMP Part 2 BMPs for installation guidelines.	Stream Bank Stabilization Surface Roughening Triangular Silt Dike Turbidity Curtain Vegetative Buffer
Mowing	Grass mowing finished height of two to six inches to minimize scalping of soil surface. Do not mow below ordinary high water mark of streams or waterways.	
Brush Cutting	Grass cutting finished height two to six inches to minimize scalping of soil surface. Native brush vegetation cutting finished height of 12 inches to maximize growth of desirable vegetation. Do not brush cut below the ordinary high water mark of streams and waterways.	
Hand Cutting	Grass cutting length of two to six inches to minimize scalping of soil surface. Do not mow below the ordinary high water mark of streams or waterways.	
Seeding	Avoid overspray into streams, ponds, lakes or wetlands. Cover all exposed soil within project limits to avoid erosion.	
Chipping	Spread chips evenly along Zones 2 or 3. Remove chips from project site.	
Chemical Application	Follow state and federal requirements, along with product label instructions.	

